

# **Progress Report**

## **The Building Years: 1997 - 2003**



### **CLEAN CORPORATE CITIZEN PROGRAM**

*A Voluntary Program Designed to Recognize  
Michigan Establishments for  
Exemplary Environmental Performance and  
Stewardship*

Jennifer M. Granholm, Governor  
Steven E. Chester, Director

The cover of this report is made from genuine recycled U.S. currency and  
50% recycled paper.

The Michigan Department of Environmental Quality  
Environmental Science and Services Division  
800-662-9278  
P.O. Box 30457  
Lansing, Michigan 48909  
*[www.michigan.gov/deq](http://www.michigan.gov/deq)*



AUTHORITY: PA 451 OF 1994	TOTAL COPIES: 250
TOTAL COST: \$227.70	COST PER COPY: \$.91
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY	



The Michigan Department of Environmental Quality (MDEQ) will not discriminate against any individual or group on the basis of race, sex, religion, age, national origin, color, marital status, disability, or political beliefs. Questions or concerns should be directed to the MDEQ Office of Human Resources, PO Box 30473, Lansing, MI 48909.

# Celebrating Pollution Prevention Success

The Michigan Department of Environmental Quality is pleased to present this Clean Corporate Citizen (C3) progress report which describes one of the nation's most successful voluntary environmental incentive based programs. This report summarizes the mission and accomplishments of the Michigan C3 program in its initial years, 1997 – 2003.

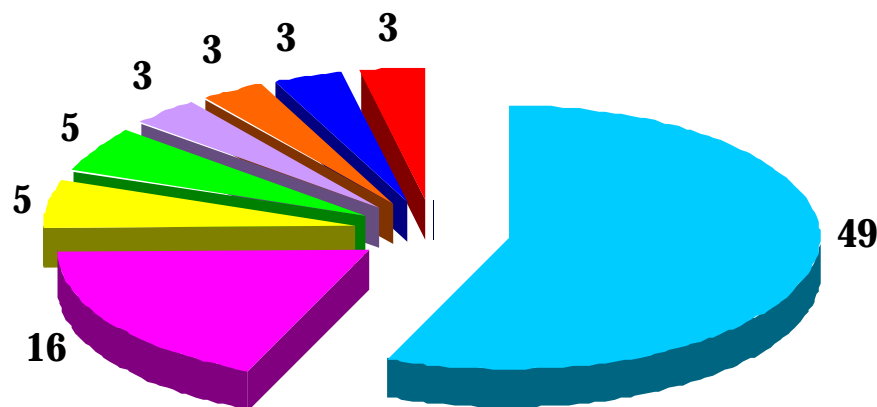
The C3 program began accepting applications in mid 1997 and designated its first three C3's by the close of that year. It has grown steadily since that time with a total of 87 establishments designated by the close of 2003. The program recently celebrated its 100<sup>th</sup> C3 designation on March 22nd, 2004. This group of participants represents virtually every manufacturing and industrial sector.

They are demonstrating that strong operational performance and effective environmental management are integral partners in today's competitive world.

Each year C3's report on their environmental progress. Every facility's Environmental Management System (EMS) is unique, so too are their business or corporate goals. Recognizing the need for flexible EMS goals when the C3 program was designed, no standard reporting parameters were established. Instead, C3 participants report the performance results of goals they establish annually. This variety of results has made aggregate environmental reporting for the C3 program difficult.

Nonetheless, in these first years, C3's reported some impressive accomplishments.

## *Distribution of Clean Corporate Citizens by Industry, 1997-2003*



Automotive Manufacture and Supply: 49  
Power Generation/ Energy Transmission: 16  
Metal Finishing/Plating and Stamping: 5  
Misc. Manufacture: 5  
Office Furniture and Lighting: 3  
Plastics and Resins: 3  
Pulp/Paper/Printing: 3  
Other: 3  
Aluminum Recycler: 1  
Office Complex: 1  
Pharmaceutical: 1

# Program Dynamics

The Clean Corporate Citizen Program (C3) allows regulated establishments that have demonstrated strong environmental performance and a commitment to continual environmental improvement to be recognized as Clean Corporate Citizens. C3's who participate in this program receive public recognition for their efforts and are eligible for benefits including expedited permit reviews and fewer monitoring and reporting requirements.

The goal is to have a large number of Michigan establishments participate in the C3 Program, with resulting improvements to the environment and regulatory flexibility to the participants. Recognizing and rewarding environmental performance provides incentive to C3s to continue striving towards greater pollution prevention (P2), but most importantly sustains our shared environment.

## **Criteria for Participation**

The C3 Program requires performance in three significant areas: environmental management, pollution prevention, and environmental compliance, and is governed by the Administrative Rules, R324.1501-1511. An establishment that does not meet all of the conditions of these three criterion is not eligible for acceptance, but is encouraged to apply again when standards of performance are met.

## **Environmental Management**

A Clean Corporate Citizen must have a sound and effective environmental management system (EMS) in place, based on the nature and scale of its operations. An EMS that meets the criteria includes, among other components:

- ◆ Identification of environmental aspects and impacts
- ◆ Self initiated compliance audits
- ◆ Public communication
- ◆ Environmental training for employees

- ◆ A clear statement of the establishment's commitment to environmental excellence and continual improvement

Establishments that are certified to ISO 14001, the International Standard for environmental management systems, also meet the EMS criteria for C3 designation.

## **Pollution Prevention**

Applicants meet these criteria by adopting Pollution Prevention policies and programs to reduce waste at the source. Pollution prevention promotes the application of cost effective, innovative techniques which lead to reductions in waste. Source reduction is the key to sustainable business; however, reuse and recycling efforts remain an important aspect to overall success. C3 designees must take action to:

- ◆ Identify P2 opportunities
- ◆ Formulate goals to address these prospects
- ◆ Report on accomplishments
- ◆ Participate in information and technical exchange

An establishment can also satisfy the P2 criteria by joining and being a member in good standing in one of the DEQ's recognized pollution prevention partnerships, such as the Michigan Business Pollution Prevention Program (MPB3).

## **Environmental Compliance**

To apply for C3 designation, an applicant must demonstrate consistent compliance with all applicable environmental requirements and have no outstanding unresolved violations. A complete list of establishment related permits, licenses, and binding agreements is required as part of the application. Specific compliance criteria must be met to apply for and receive C3 designation and upon annual renewal.

# Tracking Our Trends

## *Environmental Performance by Industry Sector*

Our Clean Corporate Citizens come in a variety of shapes and sizes, as well from cities across Michigan. Each C3 commits to making yearly efforts to reduce their environmental footprint in the areas of: **solid and hazardous waste, energy use, air emissions, water consumption, wastewater discharge, and material use.** Annually, C3's report their progress in the form of a Clean Corporate Citizen Request for Renewal, which tracks any changes in their environmental management system as well as the significant accomplishments they achieve in pollution prevention. All data is self-reported by the C3s and not verified by the Michigan Department of Environmental Quality. Not all facilities reported reductions for every category, for every year. The following are some of the highlights that C3's have shared with us since 1997, and represents cumulative reductions over this period.

### **Pulp, Paper, and Printing:**

#### **Reductions from 3 Reporting Facilities**

Solid Waste: 114,266,584 lbs

Wastewater Discharge: 54,751,800 gal

### **Power Generation and Transmission:**

#### **Reductions from 5 Reporting Facilities**

Solid Waste: 191,858,427 lbs

Energy Use: 306,098 kwh

Wastewater Discharge: 5,726,517 gal

Water Consumption: 255,011 gal

### **Furniture Manufacturers:**

#### **Reductions from 2 Reporting Facilities**

Solid Waste: 26,462,096 lbs

Energy Use: 445,030 kwh

Water Consumption: 29,809,782 gal

### **Automotive Manufacturers and Suppliers:**

#### **Reductions from 23 Reporting Facilities**

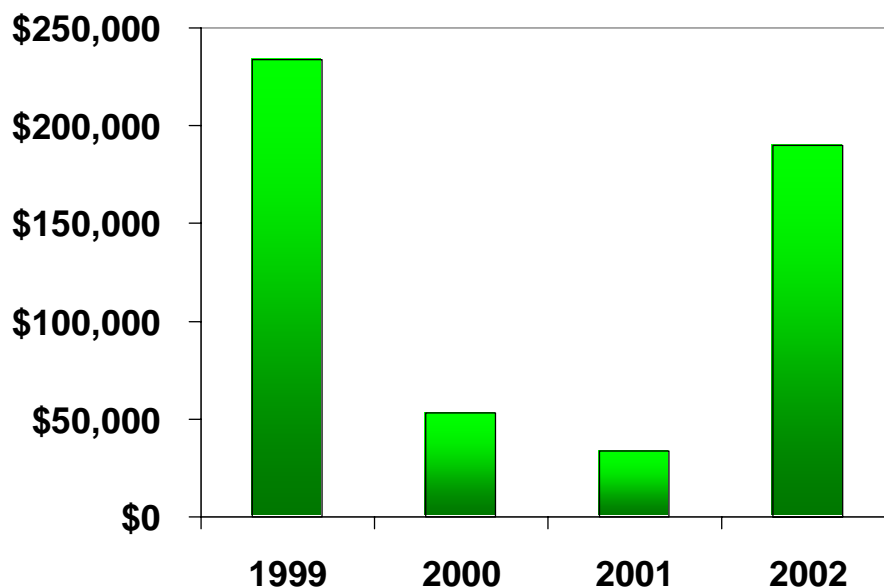
Solid Waste: 93,650,288 lbs

Energy Use: 148,594,412 kwh

Wastewater Discharge: 3,776,658 gal

Water Consumption: 19,431,843,467 gal

## *Annual Waste Reduction Cost Savings from a Sample C3 Facility*



**1999: \$234,000**  
**2000: \$53,000**  
**2001: \$34,000**  
**2002: \$190,000**

# Decreasing Waste Generation

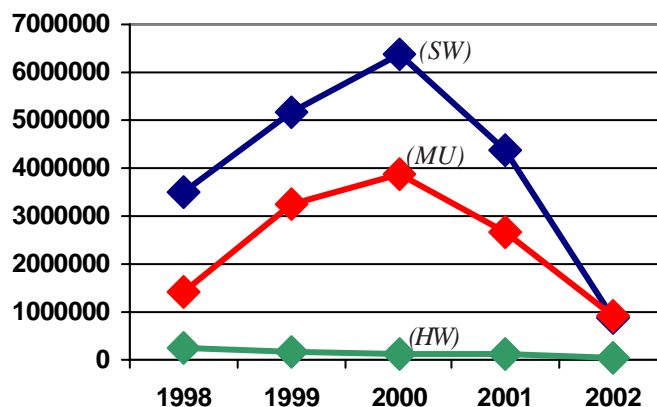
## *How Reductions Can Make a Difference at the Landfill and On the Bottomline*

1998 Total Reductions:	2001 Total Reductions:
SW: 3,490,000 lbs	SW: 4,378,396 lbs
HW: 252,627 lbs	HW: 143,198 lbs
MU: 1,412,747 lbs	MU: 2,674,534 lbs
1999 Total Reductions:	2002 Total Reductions:
SW: 5,155,960 lbs	SW: 863,080 lbs
HW: 146,992 lbs	HW: 61,947 lbs
MU: 3,267,712 lbs	MU: 925,027 lbs
2000 Total Reductions:	
SW: 6,364,720 lbs	
HW: 130,542 lbs	
MU: 3,871,622 lbs	

*(illustrated below)*

Reduction in the amount of material sent to the landfill is one of the most common achievements reported by the C3's in their renewal applications. Typical EMS and P2 goals include reductions from 5% to 100% less solid waste sent to landfills per year. One large producer of aeronautic supplies has recently begun to sell their used wooden pallets instead of sending them to the landfill. This not only generates unanticipated revenue for the facility, but avoids tons of disposed by-products annually. A typical example of solid waste reduction is the use of returnable totes made from recycled plastic for shipping materials instead of cardboard which was disposed of in the landfill.

***Total Yearly Reductions in Solid Waste (SW), Hazardous Waste (HW), and Material Use (MU) from a Sample C3***



Many companies establish recycling centers within their buildings, or begin specific recycle/reuse programs for the materials they use most. Often C3's will accompany these solid waste reduction efforts with Environmentally Preferred Purchasing, or EPP. This makes recycling or reducing waste cheaper and easier in the long term, because EPP products require little, or no additional treatment.

Hazardous waste can be problematic for facilities and disposal is typically very expensive. Clean Corporate Citizens who generate hazardous waste have been aggressively looking at ways to reduce the quantity and type of waste by-products they produce. They use a variety of methods including chemical take-back programs, product substitutions, and process changes. Many of the C3 automotive manufacturers and suppliers have begun to reclaim or recycle their used oil, drastically reducing the amount of hazardous waste generated each year, while at the same time saving money by decreasing the amount spent on oil as an input. One automotive supplier reduced disposed hazardous waste by 185,000 lbs in one year by better segregating waste streams: and saved over \$50,000 at the same time!

# Switching Off the Light

## *Efficiency in Energy Use*

*"Being recognized as a Clean Corporate Citizen in our community is not only an honor but a great tribute to the hard work and dedication of our employees and their commitment to improving the environment."*

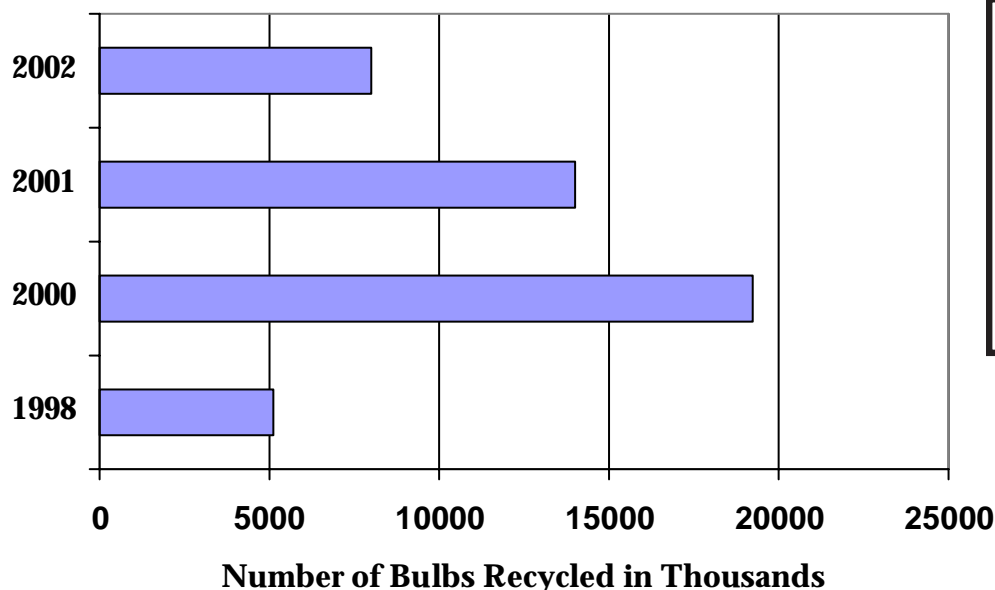
*-Steve Hoynecki  
Plant Manager,  
Visteon Corp.-  
Milan Plant*

Many members have consistently reported decreases in energy consumption during their participation in the C3 program. Some dramatic results have occurred due to equipment changes; for example, replacement of old shop-floor ceiling lighting fixtures with energy efficient radiant fixtures combined with direct lighting. Other facilities have installed motion detection lighting systems, installed automatic building temperature controls, and re-

placed outdated equipment. These top performers are not only using less energy, but saving money through continual improvements driven by their EMS and P2 goals. Facility specific goals for energy reduction have ranged from 2 to 60 percent. In just two years, a power plant in Southeast Michigan recycled and replaced over 12,000 light bulbs with Green Lighting technology. This technology reduces emissions, has a longer product life-span, and uses less energy per unit than traditional industrial light fixtures. Other C3's improved business processes and drastically reduced kilowatt hours used, while others looked at alternative fuels and reduced the amount of natural gas burned for production.

---

### *Light Bulbs and Lamps Recycled by 5 Clean Corporate Citizens 1998-2002*



1998: 5,093\*  
1999: none reported  
2000: 19,218\*  
2001: 13,983\*  
2002: 8,000\*  
  
\* bulbs, lamps,  
lighting units



# Turning Off the Faucet:

## *Reductions In Water Consumption and Wastewater Discharge*

Water is used in some capacity by every single one of our C3's, and many are choosing to reduce their environmental impact by slowing the flow, literally. A furniture manufacturer on the west side of Michigan was able to reduce water consumption by over twenty-nine million gallons, while a pulp and paper manufacturer in the Upper Peninsula was able to decrease wastewater discharge by 54,750,000 gallons in one year! And those are just a few of the accomplishments C3's are realizing. Many members have decreased their water usage by installing closed loop systems or through the use of alternate cooling methods.

Several C3's have completely eliminated the need for National Pollutant Discharge Elimination System (NPDES) permits by actively striving to identify waste stream reductions in their daily operations and through rigorous maintenance programs to identify and repair leaks. Closed loop systems for cooling are replacing batch or continuous discharges into waters of the state.

Clean Corporate Citizens operate with the environment in mind. One power plant in the program is designed to make use of the their city's wastewater tertiary



discharge. They use this discharge as a water source for their cooling tower. Instead of the city having to run evaporators to concentrate their water, this power plant concentrates or evaporates their water for them by means of their cooling tower. This amounts to a significant energy savings for them, while reducing chemical and fresh water usage at the plant. As you can see, these projects are not only good for the environment, but they make good business sense.

### Annual Reductions in Water Consumption by 14 Clean Corporate Citizens, 1997-2003

2001: 56,611,749 gal  
2002: 732,033 gal  
2003: 136,373,523 gal  
2004: 78,645,955 gal

---

***In just three years, eight Clean Corporate Citizens reduced their Wastewater Discharge by 64,253,175 gallons. That is enough water saved to fill 64 Olympic size swimming pools!***



# Cleaning up the Air

## *Reducing Emissions and Changing Chemical Technology*

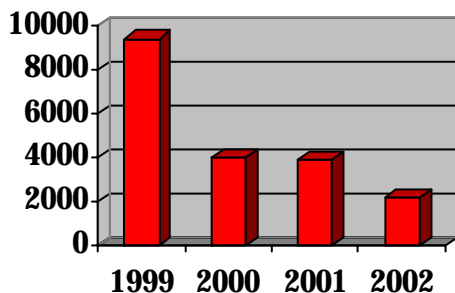
Clean Corporate Citizens are proactively working to reduce air pollutants through a variety of methods, including chemical substitutions and product changes, while still meeting customer demands, and as a result, driving significant air improvements. Particulates, VOC's, nitrogen and sulfur containing emissions, and other air pollutants have been reduced by C3 participants reflecting their EMS and P2 goals. One C3 member in southeast Michigan operates an auto assembly plant over one million square feet which now runs such a clean operation they no longer need any federal or state air permits. Another large automotive

supplier in northern Michigan eliminated all Volatile Organic Compounds (VOC's) from their air emissions. And it is not only the automotive in-

*"This designation (Clean Corporate Citizen) is a reflection of all employees effectively deploying an environmental management system into daily operations and further supports our company's commitments to environmental stewardship and leadership."*

*-Fabian Gentile, Manager of ATO Plant  
Engineering  
Ford Motor Co. Automatic Transmission New  
Product Center*

***Air Pollutant Reduction from a Sample C3 Facility***



1999: 9449 lbs    2001: 3912 lbs  
2000: 4004 lbs    2002: 2164 lbs

dustry that is making successful changes; an office furniture manufacturer in West Michigan removed over 40,000 lbs of VOC's by innovating their paint technology in just two years; while a gas transmission company that has pipelines throughout Michigan, and Canada reduced the amount of methane being released into the atmosphere by 204,000 mcf by properly monitoring pipes and joints.



*The staff of a newly designated Clean Corporate Citizen proudly display their C3 commemorative flag.*

# Being Good Neighbors

## *Conserving Habitat and Community Participation*

Not only do Clean Corporate Citizens strive to clean up business and run environmentally friendly operations, but they continually step out into their community's to make them a better place to live. Almost every C3 sponsors one, if not several city beautification, habitat restoration, or school improvement projects each year.

Some notable achievements from C3's in this area are:

◆ One company underwent a process to have biosolid sludge containing the elements of nitrogen and phosphorus cleaned as a suitable fertilizer to revitalize 5,500 acres of devastated industrial lands in White Pine, MI. The site of an abandoned copper mining operation, drained tailing ponds were creating hazardous dust in the town. This C3 was then able to recycle their sludge as fertilizer rather than sending it to landfill. This revegetated area is now a wildlife sanctuary with various fowl, eagles, one pair of wolves, and native fauna.

◆ Another C3 donated over \$25,000 to the local school district to purchase technological equipment for the district. These monies were generated by the recycling of glossy paper. This endeavor also served to employ special needs persons within the community.

◆ One C3 gives financial assistance to the MDNR to reintroduce the Coaster Brook Trout into the Gratiot and Little Carp Rivers, and Lake Sturgeon into the Ontonagon River, all species that had been fished out.

◆ Many C3's are certified by the Wildlife Habitat Council, which is a non-profit that seeks to integrate good business with great environmental, stewardship initiatives. Some recent projects include:

◆ Creation of Pheasant habitat



*Employees at a Clean Corporate Citizen gather round for an annual tree planting on site grounds.*

- ◆ Propagation of the American Lotus
- ◆ Preservation of the Lady of the Lake wetland area
- ◆ Preservation of a wildflower meadow that can be observed by the public
- ◆ Construction of raptor platforms for breeding, which later hatched two eaglets
- ◆ The planting of beetles to combat Purple Loosestrife (an invasive species) in facility wetlands.
- ◆ Installation protective covers over storm drain openings to prevent chemicals from being discharged into Lake Manistee.

# Where Do We Go From Here?

## Promoting Continual Improvement and A Vision For the Future of the C3 Program

With today's awareness of environmental concerns, facilities value their environmental reputations and are seeking to further partnerships with their neighbors to share environmental vision and ethics. The DEQ promotes the success of these top performers in workshops, publications, and conferences. A new recognition program called the Neighborhood Environmental Partnership (NEP) [www.michigan.gov/deqnep](http://www.michigan.gov/deqnep), has recently been developed for C3's to further encourage environmental projects and partnerships between these facilities and their local communities.

Mini-workshops are another recent addition to the benefit package of C3's. These gatherings, hosted by C3's, promote technology sharing, networking, and give these leaders a chance to showcase significant environmental improvements at their site.

Several P2 partnerships have been developed to assist both C3's and other facilities with these proactive efforts. Most C3s are members in one or more of these voluntary partnerships, as pollution prevention is an integral part of the program.

### DEQ's Recognized P2 Partnerships Include:

- ◆ Michigan Business Pollution Prevention Partnership (MBP3)
- ◆ Michigan Great Printers Project
- ◆ Michigan Turfgrass Environmental Stewardship Program
- ◆ Pulp & Paper Pollution Prevention Program (P5)
- ◆ Metal Finishing Pollution Prevention Program
- ◆ Clean Marinas Program
- ◆ Agricultural Pollution Prevention Programs (AgP2)

The C3 program has grown dramatically in the past several years and now boasts over one hundred facilities. The challenges for the future are to continue to build the numbers and diversity of new members while maintaining and enhancing value for the existing participants. Collecting data in a consistent format should help measure and quantify success at each facility, by industry sector, and across the C3 program. Using and assessing this data will also help the DEQ assist our C3's by determining the needs of our program members, and to see where the Clean Corporate Citizen Program can improve and enhance the services we offer to Michigan establishments across the state.



## **CLEAN CORPORATE CITIZEN PROGRAM**

For any questions, concerns, or requests for more information concerning the C3 Program, contact the Environmental Science and Services Division at **800-662-9278**. Mailed requests may be sent to:

**Clean Corporate Citizens Program**  
Pollution Prevention and Compliance Assistance  
Section  
Environmental Science and Services Division  
Michigan Department of Environmental Quality  
PO Box 30457  
Lansing, MI 48909-7957